

Serial No. 10/636,623

REMARKS

The Applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claim Objections

The Examiner has objected to claim 2 due to an informality. In particular, he stated that in line 10, the term "detected rolling angle" should read "detected rolling angular."

By this response Applicants have amended claim 2 in a manner that eliminates this informality.

Applicants therefore respectfully request that the Examiner withdraw the objection to claim 2.

Claim Rejections 35 USC § 102

The Examiner has rejected claim 1 under 35 U.S.C. § 102(e) as being allegedly anticipated by United States Patent No. 6,681,196 to Glaser et al. ("Glaser"). Applicants respectfully traverse this rejection.

However in an effort to better recite the present claimed invention, Applicants have amended claim 1 to recite a means for determining that the vehicle is rolling over when the difference between two angular velocities exceeds a predetermined value, such that the determination is "made solely based on the difference between the two angular velocities." This makes it clear that the recited system uses only the difference between the two angular velocities to make a determination as to whether the vehicle is rolling over.

Nothing in Glaser discloses or suggests a device in which a determination as to whether a vehicle is roiling over be made based on a difference in angular velocities, as recited in amended

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claim 1, Glaser notes that in modern occupant protection systems for motor vehicles, the task arises, in the event of rollover about the longitudinal axis, of detecting the absolute angle of rotation of the vehicle in order to be able to correctly time a decision to fire a restraining device or other protection devices. (See, e.g., Glaser, column 1, lines 22-26.) It then proceeds to disclose a multiple step method (and related device) for determining the absolute angle of rotation needed for timing the decision to fire the restraining device. But nowhere does it disclose or suggest determining that there is a vehicle rollover based entirely on a difference between two angular velocities. In fact, Glaser relies on changes in rotation in both horizontal and vertical axes of the vehicle to determine a rollover.

Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. § 102(e) as being allegedly anticipated by Glaser.

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 102(b) as being allegedly anticipated by United States Patent No. 6,363,306 to Palmertz et al. ("Palmertz"). Applicants respectfully traverse this rejection.

With respect to claim 1, as noted above, amended claim 1 recites a means for determining that the vehicle is rolling over when the difference between two angular velocities exceeds a predetermined value, such that the determination is "made solely based on the difference between the two angular velocities." This feature is not disclosed or suggested in Palmertz.

Palmertz discloses a device and method that determines the angular position and angular speed of rotation of a vehicle around at least one axis, compares these with threshold values, with at least one of these threshold values being variable, and actuates a protective device based on that comparison. (See e.g., Palmertz, col. 10, line 26, though col. 13, line 33, and Fig. 2.)

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However, nothing in Palmertz discloses or suggests that a determination of whether a vehicle is rolling over be made solely based on a difference between two angular velocities, as recited in claim 1.

With respect to claim 2, in an effort to better recite the present claimed invention, Applicants have amended claim 2 to recite first means for calculating a difference between two rolling angular velocities detected in the angular velocity sensor over a predetermined time interval," "second means for calculating a rolling angle of the vehicle based on the angular velocity detected by the angular velocity sensor," and "determining means for determining that the vehicle is rolling over, the determining being made first based on whether the difference calculated by the first means for calculating exceeds a predetermined value, and second based on the rolling angle calculated by the second determining means, if the difference does not exceed the predetermined value."

Thus, in determining whether the vehicle is in a rollover state, the system looks first to whether the difference between two rolling angular velocities exceeds a threshold, and if that is not the case, whether the rolling angle meets some set of parameters. As noted in Applicants' specification, this provides an advantage in that the system can accurately detect two different kinds of rollovers in turn. The first means for calculating allows the determining means to detect whether the vehicle is engaging in a rapid rollover by checking the difference between two rolling angular velocities. Then, if the difference output by the first means for calculating does not exceed the threshold value (i.e., the predetermined value), the second means for calculating allows the determining means to detect whether the vehicle is engaging in a normal rollover by checking the rolling angle of the vehicle. (See, e.g., Applicants' specification, page 10, lines

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12-25.) This two-step operation of the determining means is not disclosed or suggested in Palmertz.

Palmertz discloses a device and method that determines the angular position and angular speed of rotation of a vehicle around at least one axis, compares these with a host of threshold values, with at least one of these threshold values being variable, and actuates a protective device based on that comparison. (See e.g., Palmertz, col. 10, line 26, though col. 13, line 33, and Fig. 2.) However, nothing in Palmertz discloses or suggests that an element for determining rollover first looks to whether a difference between two rolling angular velocities exceeds a predetermined value, and only second looks to a rolling angle if the difference between the two rolling angular velocities does not exceed the predetermined value.

The fact that Palmertz notes that values regarding the angular acceleration ϕ and Y around the longitudinal and latitudinal axes can be calculated and used to determine whether there is a rollover state does not disclose or suggest the multiple-step operation of claim 2. Nothing in Palmertz discloses the particular order of operation recited in claim 2.

Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 1 and 2 under 35 U.S.C. § 102(b) as being allegedly anticipated by Palmertz.

Claim Rejections 35 USC § 103

The Examiner has rejected claim 6 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Glaser in view of United States Patent No. 6,038,495 to Schiffmann ("Schiffmann"). Applicants respectfully traverse this rejection.

Claim 6 depends from claim 1 and is allowable for at least the reasons given above for claim 1. Nothing in Schiffmann cures the deficiencies in Glaser noted above.

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Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claim 6 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Glaser in view of Schiffmann.

The Examiner has rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Palmertz in view of Schiffmann. Applicants respectfully traverse this rejection.

Claim 6 depends from claim 1 and is allowable for at least the reasons given above for claim 1. Nothing in Schiffmann cures the deficiencies in Palmertz noted above. Claim 7 depends from claim 2 and is allowable for at least the reasons given above for claim 2. Nothing in Schiffmann cures the deficiencies in Palmertz noted above.

Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 6 and 7 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Palmertz in view of Schiffmann.

New Claims

By this response Applicants have added new claims 9-13. Applicants respectfully request that the Examiner consider and allow these new claims. No new matter is being added with these new claims.

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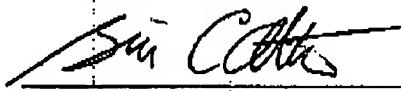
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Conclusion

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



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